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|---|---|
| **From:** | JOHNSON Keith |
| **To:** | McClintock, Katie |
| **Cc:** | DAVIS George; MONRO David; JOHNSON Keith; ebersole.gerald@deq.state.or.us; Hedgpeth, Zach; Downey, Scott |
| **Subject:** | FW: Bullseye Source testing |
| **Date:** | Friday, April 22, 2016 4:37:34 PM |

Katie,

Thanks for the input and the technical points you've raised. For the information DEQ needs to keep the public safe, the agreed upon source testing plan is sufficient. DEQ Method 5 measures both the filterable and condensable fraction of the particulate stream. Using this to calculate the removal efficiency will provide an accurate, if underestimated, control efficiency for the hexavalent (and total) chromium based on the inlet temperature relative to the melting point of the hexavalent chromium compounds. Data that DEQ has about the baghouse inlet temperature shows it will be hundreds of degrees below the melting point of the hexavalent chromium compounds; the hexavalent chromium will be a solid when it comes into contact with the pollution control equipment. Testing for hexavalent chromium at the exhaust of the baghouse also potentially runs into detection limit issues inherent in the method.

As for the second option, removing the hexavalent chromium testing on the inlet would be counter to the needs and requirements we established under our temporary rules (which lead to establishing chromium III usage limitations). In those temporary rules we deployed some aspects of a human health risk based program, particularly to address chromium VI emissions; we did this, in part, to make sure that the data informed the requirements. Collecting the total chromium and hexavalent chromium on the inlet to the baghouse gives us data representative of chromium emissions from an uncontrolled furnace, better data about the formation rate of chromium VI from chromium III, and is also far more likely to avoid potential detection limit issues in the method.

We agree that there may be a future need, depending on the results of the current round of testing, to collect additional information about hexavalent chromium. We have also communicated to Bullseye that, while not required at this time, both DEQ and EPA see that there may be a future requirement to test and that we would be amenable to reviewing an amended source test plan that includes chromium testing on the exhaust. We'll keep you informed.

Thanks!

Keith Johnson
NWR AQ
503-229-6431



**From:** EBERSOLE Gerald
**Sent:** Tuesday, April 19, 2016 4:20 PM
**To:** MONRO David; FELDON Leah
**Subject:** FW: Bullseye Source testing

FYI

**From:** McClintock, Katie [mailto:McClintock.Katie@epa.gov]

**Sent:** Tuesday, April 19, 2016 4:19 PM
**To:** EBERSOLE Gerald
**Cc:** Downey, Scott; Hedgpeth, Zach; EISELE Michael; DAVIS George
**Subject:** Bullseye Source testing

Jerry –

Thanks for your time today to discuss the Bullseye source testing options. As requested, here are our thoughts in a little more detail:

Current proposed methods (as we understand them):

Baghouse Inlet: DEQ Method 5 and Method 0061 (including both Cr6+ and total chromium)

Baghouse Outlet: DEQ Method 5

We are concerned that the proposed testing plan doesn't capture hex chrome and total chrome on the outlet. Without outlet information, you will be unable to determine how much chromium (hex or total) is emitted. Although one could apply the filterable control efficiency calculated from Method 5 to calculate outlet chromium, this is a broad and potentially inaccurate assumption. One complicating factor is that the Method 0061 does not give a filterable and condensable fraction which makes it impossible to determine how much could be removed by a well-functioning baghouse. Applying the filterable fraction makes the assumption that all is filterable without data to support it. Given the importance of the issues here and the small quantities necessary for hex chrome concerns, we recommend that both inlet and outlet are sampled. I will also note that the national interest in this issue at this facility and other similar facilities also makes this complete and accurate data set of high importance.

EPA proposal: (again additional methods in red)

Baghouse Inlet: Method 5/202 (or ODEQ Method 5) and Method 0061 (including both Cr6+ and total chromium)

Baghouse Outlet: Method 5/202 (or ODEQ Method 5) and **Method 0061 (including both Cr6+ and total chromium)**

We are aware this 0061 method is very expensive and could almost add another 50% of the cost to the test. We believe it is worth this cost given the discussion above. However, if OR cannot support two Method 0061 tests, we'd be willing to discuss the alternative outlined below. In this alternative the Method 0061 would be done on the outlet and the inlet test would be method 5 and 29 (which can be done with one sample train for much less additional cost than a method 0061). The M29 test would allow you to compare total chromium before and after the control device but wouldn't allow you to know hex chrome on the inlet. The downside here is that the hex chrome on the outlet could be below the detection levels. We'd also be comparing very different methods to determine Cr control efficiency, but there has been some studies on this in the past. We believe this option is less ideal but we believe the results would be more complete than what is currently proposed.

Fallback EPA request: (again additional methods/changes in red)

Baghouse Inlet: Method 5 and Method 29 for total chrome only.

Baghouse Outlet: Method 5/202 (or ODEQ Method 5) and **Method 0061 (including both Cr6+ and total chromium) – moved from inlet to outlet.**

Thanks for your time reviewing this. Please let me know if you would like Zach Hedgpeth, me, our HQ expert Stef Johnson for any follow up conversations.

Katie McClintock
Air Enforcement Officer
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